

## RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.

Application Serial Number:

10/583/202

Source:

IFWP

Date Processed by STIC:

6/27/06

# ***ENTERED***



IFWP

## RAW SEQUENCE LISTING

DATE: 06/27/2006

PATENT APPLICATION: US/10/583,202

TIME: 12:05:32

Input Set : A:\SEQLIST.TXT

Output Set: N:\CRF4\06272006\J583202.raw

```

4 <110> APPLICANT: Murdoch University
5      Novartis Animal Health US, Inc.
6      Hampson, David John
7      La, Tom
9 <120> TITLE OF INVENTION: Brachyspira pilosicoli 72 kDa outer
10     membrane protein and diagnostic and therapeutic uses
11     thereof.
13 <130> FILE REFERENCE: 34141A
C--> 15 <140> CURRENT APPLICATION NUMBER: US/10/583,202
C--> 15 <141> CURRENT FILING DATE: 2006-06-16
15 <150> PRIOR APPLICATION NUMBER: PCT/AU2004/001783
16 <151> PRIOR FILING DATE: 2004-12-17
18 <150> PRIOR APPLICATION NUMBER: AU2003907017
19 <151> PRIOR FILING DATE: 2003-12-19
21 <160> NUMBER OF SEQ ID NOS: 38
23 <170> SOFTWARE: FastSEQ for Windows Version 4.0
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 1750
27 <212> TYPE: DNA
28 <213> ORGANISM: Brachyspira pilosicoli
30 <400> SEQUENCE: 1
31 atgagtactt taataaagaa aatcgtagct tatatagctt taatctcttt tagtttttagc 60
32 gtattacctg ctcaaactta tgatgatgcy gctagaatta ctggagaagc tgagacttta 120
33 caaaatgacg gagaatacca aaagtcctat gataaatctc aagaggcttc tgactctata 180
34 gataaaacta ctgtatcatt attttataga ttaatgaact taagaatagc taaagcaaaa 240
35 aatgatgcaa ataagactat taatgaaata gaacaattag gtgcttctac tgataatgaa 300
36 tttaaaacaa aatatcaaga agctctaaaa ttctttgaag aaggaaataa tagtattact 360
37 aacttacctc cagaaccgca aactcctcct acagatgaag agtttactgc ttcttcaaac 420
38 acattcacta cagtatataa ttctttcaac aatgctttac aatctgctaa cagtgtaaaa 480
39 gaagggttat ttaatagaga aagagcaata gcttcaaaat ccattaatga tgctagaaac 540
40 aaatataaag cagaattagg caagagtgtg aaagcaggcg atgctaata tagaaatatt 600
41 aatggtgctt taactagagc tgatgaagca cttagcaatg acaattttgc aagcggttcag 660
42 cagaatgtat ctactgcatt agctggtata aataaagcta tagcagatgc taaggcgaaa 720
43 gctgaggcag aagctaaagc aaaagctgct gctgaagcta aggcaagagc tgaagcagag 780
44 gctaaagcga aagcagaagc tgctgctaaa gcaaaagctg aagcagaggc taaagcgaaa 840
45 gcagatgcaa tagcaaaagc taaaaaagac atagaagatg cacaaaaata atataataat 900
46 ttagttaatg atcaagtaat agctaaaggt gatgataatg ataaaaacgt atcaaaactt 960
47 ttaactgatg ctaataatgc tttaaaaaac actcctcaaa ctgcaagcga taaagcttta 1020
48 gaagcttcta aaactatgga taatatatta aacactgcta atcaattgaa aaaagaagaa 1080
49 gctgttaaaa atctagagca attaaaggca agaagagaca gacttataag cgaagggttat 1140
50 ttaactaaag acagcgaaga agaacaaaag ttatctcaaa ctattaaaga agctgaagat 1200
51 gcttttaaata acaatgatta tgtttttagct gaccaaaaaa tgcaggaagc taatcttaac 1260
52 atgaatgcta tagaagagag aggacctatt gacggacaag ttataacctg tgaaatgggc 1320

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/583,202

DATE: 06/27/2006

TIME: 12:05:32

Input Set : A:\SEQLIST.TXT

Output Set: N:\CRF4\06272006\J583202.raw

```

53 ggtaacgaaa ctgggtcaaatt aattgatgct actactggctc aagaagtaaa tacagaagga 1380
54 aaagttactg tattacctca atattatggt gtagtaagaa gactacctct aactgatgct 1440
55 ttatggagaa ttgctggata cagctacata tacaacaacc ctatagaatg gtacagaata 1500
56 tatgaagcta acagaaatgt acttagagac cctaataacc ctgatttaat acttcctggg 1560
57 caaagattaa taatacctag ccttaatggt gaagagagaa gcggtgatta taatcctgat 1620
58 ttagagtatt tgacttatga tgaggttatg cagttaagac agcaaaataa cactactcaa 1680
59 gcacaacagt aagaaataaa cttataaaat acaaaaggctc atgcatttaa tatgtatgac 1740
60 ctttttttgt                                     1750
62 <210> SEQ ID NO: 2
63 <211> LENGTH: 564
64 <212> TYPE: PRT
65 <213> ORGANISM: Brachyspira pilosicoli
67 <400> SEQUENCE: 2
68 Met Ser Thr Leu Ile Lys Lys Ile Val Ala Tyr Ile Ala Leu Ile Ser
69 1 5 10 15
70 Phe Ser Phe Ser Val Leu Pro Ala Gln Thr Tyr Asp Asp Ala Ala Arg
71 20 25 30
72 Ile Thr Gly Glu Ala Glu Thr Leu Gln Asn Asp Gly Glu Tyr Gln Lys
73 35 40 45
74 Ser Tyr Asp Lys Ser Gln Glu Ala Ser Asp Ser Ile Asp Lys Thr Thr
75 50 55 60
76 Val Ser Leu Phe Tyr Arg Leu Met Asn Leu Arg Ile Ala Lys Ala Lys
77 65 70 75 80
78 Asn Asp Ala Asn Lys Thr Ile Asn Glu Ile Glu Gln Leu Gly Ala Ser
79 85 90 95
80 Thr Asp Asn Glu Phe Lys Thr Lys Tyr Gln Glu Ala Leu Lys Phe Phe
81 100 105 110
82 Glu Glu Gly Asn Asn Ser Ile Thr Asn Leu Pro Pro Glu Pro Gln Thr
83 115 120 125
84 Pro Pro Thr Asp Glu Glu Phe Thr Ala Ser Ser Asn Thr Phe Thr Thr
85 130 135 140
86 Val Tyr Asn Ser Phe Asn Asn Ala Leu Gln Ser Ala Asn Ser Val Lys
87 145 150 155 160
88 Glu Gly Tyr Leu Asn Arg Glu Arg Ala Ile Ala Ser Lys Ser Ile Asn
89 165 170 175
90 Asp Ala Arg Asn Lys Tyr Lys Ala Glu Leu Gly Lys Ser Val Lys Ala
91 180 185 190
92 Gly Asp Ala Asn Asp Arg Asn Ile Asn Gly Ala Leu Thr Arg Ala Asp
93 195 200 205
94 Glu Ala Leu Ser Asn Asp Asn Phe Ala Ser Val Gln Gln Asn Val Ser
95 210 215 220
96 Thr Ala Leu Ala Gly Ile Asn Lys Ala Ile Ala Asp Ala Lys Ala Lys
97 225 230 235 240
98 Ala Glu Ala Glu Ala Lys Ala Lys Ala Ala Ala Glu Ala Lys Ala Arg
99 245 250 255
100 Ala Glu Ala Glu Ala Lys Ala Lys Ala Glu Ala Ala Ala Lys Ala Lys
101 260 265 270
102 Ala Glu Ala Glu Ala Lys Ala Lys Ala Asp Ala Ile Ala Lys Ala Lys
103 275 280 285

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/583,202

DATE: 06/27/2006

TIME: 12:05:32

Input Set : A:\SEQLIST.TXT

Output Set: N:\CRF4\06272006\J583202.raw

```

104 Lys Asp Ile Glu Asp Ala Gln Asn Lys Tyr Asn Asn Leu Val Asn Asp
105      290                      295                      300
106 Gln Val Ile Ala Lys Gly Asp Asp Asn Asp Lys Asn Val Ser Lys Leu
107 305                      310                      315                      320
108 Leu Thr Asp Ala Asn Asn Ala Leu Gln Asn Thr Pro Gln Thr Ala Ser
109                      325                      330                      335
110 Asp Lys Ala Leu Glu Ala Ser Lys Thr Met Asp Asn Ile Leu Asn Thr
111                      340                      345                      350
112 Ala Asn Gln Leu Lys Lys Glu Glu Ala Val Lys Asn Leu Glu Gln Leu
113                      355                      360                      365
114 Lys Ala Arg Arg Asp Arg Leu Ile Ser Glu Gly Tyr Leu Thr Lys Asp
115                      370                      375                      380
116 Ser Glu Glu Glu Gln Lys Leu Ser Gln Thr Ile Lys Glu Ala Glu Asp
117 385                      390                      395                      400
118 Ala Leu Asn Asn Asn Asp Tyr Val Leu Ala Asp Gln Lys Met Gln Glu
119                      405                      410                      415
120 Ala Asn Leu Asn Met Asn Ala Ile Glu Glu Arg Gly Pro Ile Asp Gly
121                      420                      425                      430
122 Gln Val Ile Pro Gly Glu Met Gly Gly Asn Glu Thr Gly Gln Ile Ile
123                      435                      440                      445
124 Asp Ala Thr Thr Gly Gln Glu Val Asn Thr Glu Gly Lys Val Thr Val
125                      450                      455                      460
126 Leu Pro Gln Tyr Tyr Val Val Val Arg Arg Val Pro Leu Thr Asp Ala
127 465                      470                      475                      480
128 Leu Trp Arg Ile Ala Gly Tyr Ser Tyr Ile Tyr Asn Asn Pro Ile Glu
129                      485                      490                      495
130 Trp Tyr Arg Ile Tyr Glu Ala Asn Arg Asn Val Leu Arg Asp Pro Asn
131                      500                      505                      510
132 Asn Pro Asp Leu Ile Leu Pro Gly Gln Arg Leu Ile Ile Pro Ser Leu
133                      515                      520                      525
134 Asn Gly Glu Glu Arg Ser Gly Asp Tyr Asn Pro Asp Leu Glu Tyr Leu
135                      530                      535                      540
136 Thr Tyr Asp Glu Val Met Gln Leu Arg Gln Gln Asn Asn Thr Thr Gln
137 545                      550                      555                      560
138 Ala Gln Gln Glx
142 <210> SEQ ID NO: 3
143 <211> LENGTH: 32
144 <212> TYPE: PRT
145 <213> ORGANISM: Brachyspira pilosicoli
147 <220> FEATURE:
148 <223> OTHER INFORMATION: mp-72 protein fragment
150 <400> SEQUENCE: 3
151 Lys Val Thr Val Leu Pro Gln Tyr Tyr Val Val Val Arg Arg Val Pro
152 1      5      10      15
153 Leu Thr Asp Ala Leu Trp Arg Ile Ala Gly Tyr Ser Tyr Ile Tyr Asn
154      20      25      30
157 <210> SEQ ID NO: 4
158 <211> LENGTH: 22
159 <212> TYPE: PRT

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/583,202

DATE: 06/27/2006

TIME: 12:05:32

Input Set : A:\SEQLIST.TXT

Output Set: N:\CRF4\06272006\J583202.raw

```

160 <213> ORGANISM: Brachyspira pilosicoli
162 <220> FEATURE:
163 <223> OTHER INFORMATION: mp-72 protein fragment
165 <400> SEQUENCE: 4
166 Leu Ile Lys Lys Ile Val Ala Tyr Ile Ala Leu Ile Ser Phe Ser Phe
167 1           5           10           15
168 Ser Val Leu Pro Ala Gln
169           20
172 <210> SEQ ID NO: 5
173 <211> LENGTH: 13
174 <212> TYPE: PRT
175 <213> ORGANISM: Brachyspira pilosicoli
177 <220> FEATURE:
178 <223> OTHER INFORMATION: mp-72 protein fragment
180 <400> SEQUENCE: 5
181 Lys Thr Thr Val Ser Leu Phe Tyr Arg Leu Met Asn Leu
182 1           5           10
185 <210> SEQ ID NO: 6
186 <211> LENGTH: 7
187 <212> TYPE: PRT
188 <213> ORGANISM: Brachyspira pilosicoli
190 <220> FEATURE:
191 <223> OTHER INFORMATION: mp-72 protein fragment
193 <400> SEQUENCE: 6
194 Asn Asp Gln Val Ile Ala Lys
195 1           5
198 <210> SEQ ID NO: 7
199 <211> LENGTH: 14
200 <212> TYPE: PRT
201 <213> ORGANISM: Brachyspira pilosicoli
203 <220> FEATURE:
204 <223> OTHER INFORMATION: mp-72 protein fragment
206 <400> SEQUENCE: 7
207 Asp Leu Ile Leu Pro Gly Gln Arg Leu Ile Ile Pro Ser Leu
208 1           5           10
211 <210> SEQ ID NO: 8
212 <211> LENGTH: 8
213 <212> TYPE: PRT
214 <213> ORGANISM: Brachyspira pilosicoli
216 <220> FEATURE:
217 <223> OTHER INFORMATION: mp-72 protein fragment
219 <400> SEQUENCE: 8
220 Asn Asp Tyr Val Ala Leu Asp Gln
221 1           5
224 <210> SEQ ID NO: 9
225 <211> LENGTH: 18
226 <212> TYPE: PRT
227 <213> ORGANISM: Brachyspira pilosicoli
229 <220> FEATURE:

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/583,202

DATE: 06/27/2006

TIME: 12:05:32

Input Set : A:\SEQLIST.TXT

Output Set: N:\CRF4\06272006\J583202.raw

230 <223> OTHER INFORMATION: mp-72 protein fragment  
 232 <400> SEQUENCE: 9  
 233 Phe Ala Ser Val Gln Gln Asn Val Ser Thr Ala Leu Ala Gly Ile Asn  
 234 1 5 10 15  
 235 Lys Ala  
 239 <210> SEQ ID NO: 10  
 240 <211> LENGTH: 6  
 241 <212> TYPE: PRT  
 242 <213> ORGANISM: Brachyspira pilosicoli  
 244 <220> FEATURE:  
 245 <223> OTHER INFORMATION: mp-72 protein fragment  
 247 <400> SEQUENCE: 10  
 248 Val Ser Lys Leu Leu Thr  
 249 1 5  
 252 <210> SEQ ID NO: 11  
 253 <211> LENGTH: 13  
 254 <212> TYPE: PRT  
 255 <213> ORGANISM: Brachyspira pilosicoli  
 257 <220> FEATURE:  
 258 <223> OTHER INFORMATION: mp-72 protein fragment  
 260 <400> SEQUENCE: 11  
 261 Asp Leu Glu Tyr Leu Thr Tyr Asp Glu Val Met Gln Leu  
 262 1 5 10  
 265 <210> SEQ ID NO: 12  
 266 <211> LENGTH: 8  
 267 <212> TYPE: PRT  
 268 <213> ORGANISM: Brachyspira pilosicoli  
 270 <220> FEATURE:  
 271 <223> OTHER INFORMATION: mp-72 protein fragment  
 273 <400> SEQUENCE: 12  
 274 Asn Ala Leu Gln Ser Ala Asn Ser  
 275 1 5  
 278 <210> SEQ ID NO: 13  
 279 <211> LENGTH: 7  
 280 <212> TYPE: PRT  
 281 <213> ORGANISM: Brachyspira pilosicoli  
 283 <220> FEATURE:  
 284 <223> OTHER INFORMATION: mp-72 protein fragment  
 286 <400> SEQUENCE: 13  
 287 Asp Gly Gln Val Ile Pro Gly  
 288 1 5  
 291 <210> SEQ ID NO: 14  
 292 <211> LENGTH: 7  
 293 <212> TYPE: PRT  
 294 <213> ORGANISM: Brachyspira pilosicoli  
 296 <220> FEATURE:  
 297 <223> OTHER INFORMATION: mp-72 protein fragment  
 299 <400> SEQUENCE: 14  
 300 Val Lys Asn Leu Glu Gln Leu

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/583,202

DATE: 06/27/2006

TIME: 12:05:33

Input Set : A:\SEQLIST.TXT

Output Set: N:\CRF4\06272006\J583202.raw

L:15 M:270 C: Current Application Number differs, Replaced Current Application No

L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date